

Inductive sensor

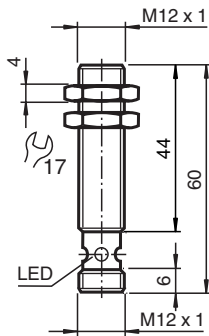
NBB4-12GM45-E2-V1-M



- Basic series
- Increased operating distance
- Extended temperature range
-40 ... +85 °C
- E1-Type approval
- Increased noise immunity 100 V/m



Dimensions



Technical Data

General specifications

Switching function		Normally open (NO)
Output type		PNP
Rated operating distance	s_n	4 mm
Installation		flush
Output polarity		DC
Assured operating distance	s_a	0 ... 3.24 mm
Reduction factor r_{Al}		0.39
Reduction factor r_{Cu}		0.35
Reduction factor r_{304}		0.75
Output type		3-wire

Nominal ratings

Operating voltage	U_B	10 ... 60 V
Switching frequency	f	0 ... 800 Hz
Hysteresis	H	typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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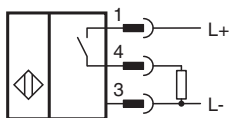
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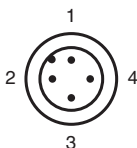
Technical Data

Voltage drop	U_d	≤ 2.5 V
Rated insulation voltage	U_{BIS}	60 V
Operating current	I_L	0 ... 200 mA
Off-state current	I_r	0 ... 0.5 mA typ. 0.1 μ A
No-load supply current	I_0	≤ 11 mA
Time delay before availability	t_v	≤ 5 ms
Switching state indicator	Multihole-LED, yellow	
Functional safety related parameters		
MTTF _d	1560 a	
Mission Time (T _M)	20 a	
Diagnostic Coverage (DC)	0 %	
Compliance with standards and directives		
Standard conformity		
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007	
Approvals and certificates		
Protection class	II	
Rated insulation voltage	U_i	60 V
Rated impulse withstand voltage	U_{imp}	800 V
UL approval	cULus Listed, General Purpose	
CSA approval	cCSAus Listed, General Purpose	
CCC approval	Certified by China Compulsory Certification (CCC)	
E1 Type approval	10R-04	
Ambient conditions		
Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)	
Mechanical specifications		
Connection type	Connector plug M12 x 1 , 4-pin	
Housing material	brass, nickel-plated	
Sensing face	PBT	
Degree of protection	IP68 / IP69K	
Mass	120 g	

Connection



Connection Assignment



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Safety Information

Emitted interference and interference immunity in accordance with motor vehicle directive 2006/28/EG (e1 Type approval)
 Interference immunity in accordance with DIN ISO 11452-2: 100 V/m
 Frequency band 20 MHz up to 2 GHz

Mains-borne interference in accordance with ISO 7637-2:

Pulse	1	2a	2b	3a	3b	4
Severity level	III	III	III	III	III	III
Failure criterion	C	A	C	A	A	A

EN 61000-4-2: CD: 4 kV / AD: 8 kV
 Severity level II III


EN 61000-4-3: 30 V/m (80...2500 MHz)
 Severity level IV

EN 61000-4-4: 2 kV
 Severity level III

EN 61000-4-6: 10 V (0.01...80 MHz)
 Severity level III

EN 55011: Class A

Accessories

	EXG-12	Quick mounting bracket with dead stop
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